

Notes on the Spiny Softshell, *Apalone spinifera*
(Testudines: Trionychidae), in Southeastern Virginia

JOSEPH C. MITCHELL

Department of Biology University of Richmond
Richmond, Virginia 23173

AND

RONALD SOUTHWICK¹

Virginia Department of Game and Inland Fisheries
6530 Indian River Road
Virginia Beach, Virginia 23464

ABSTRACT—The Gulf Coast spiny softshell turtle (*Apalone spinifera aspera*), collected in Lake Whitehurst, Norfolk, Virginia, represents the first record of this subspecies for the state. The eastern spiny softshell (*Apalone spinifera spinifera*) occurs naturally in the Tennessee and Ohio drainages in southwestern Virginia. Based on available evidence, the Norfolk population and a population of the nominate subspecies in Isle of Wight County, Virginia, also reported here, should be considered isolated, introduced, and established populations.

Apalone spinifera is a wide-ranging species in North America occurring from the Rio Grande River northeastward through the midwest to the Great Lakes region and eastward through the Carolinas to the Atlantic Ocean (Ernst and Barbour 1972, Conant and Collins 1991). Seven subspecies are recognized (Ernst and Barbour 1989, Iverson 1992), of which one, *Apalone spinifera spinifera*, occurs naturally in the Tennessee River drainage in southwestern Virginia (Tobey 1985). Recent discoveries of populations of this species in southeastern Virginia raise questions about the occurrence of a second subspecies in the state and demonstrate that introduced populations can become established in this area.

On 25 June 1991, a large female *A. spinifera spinifera* (370 mm carapace length [CL], 283 mm plastron length [PL], and 5.5 kg body mass) was discovered adjacent to a commercial fish rearing pond, 4.8 km east of Windsor, Isle of Wight County, Virginia; she was released. Subsequent observations (5 July and 24 October 1991) and captures (9 November 1991) revealed at least four other adults (a male 262 mm CL, 184 mm PL, 1,550 g, The Living Museum, Newport News, Virginia) and one juvenile (111 mm CL, 85 mm PL, National

¹Present address: Virginia Department of Game and Inland Fisheries, 2006 South Main Street, Suite C, Blackburg, VA 24060.

Museum of Natural History, USNM 314209) in several rearing ponds on the same site. The hatchery owner could not verify time or source (e.g., shipments of commercial fish) of the turtles. He noted that they have been present for several years.

The discovery of another population in southeastern Virginia is comparatively more perplexing. In October 1988, an unidentified soft-shell turtle was observed in Lake Whitehurst, City of Norfolk, Virginia (T. Pitchford, personal communication, Virginia Beach Marine Science Museum). Softshells were confirmed in this lake on 2 August 1991 when an adult male *A. spinifera aspera* (196 mm CL, 134 mm PL, 574 g body mass, USNM 314210) was collected on hook and line. A large female was taken by another fisherman between 13 August and 1 September 1991 but it escaped, and its identity cannot be confirmed. Three juveniles found beneath a boat dock on Lake Whitehurst near Shore Drive on 21 September 1991 were given to the junior author by a local boy who said that the turtles were coming out of the sand. The juveniles averaged 51.0 ± 2.0 (SD) mm CL (range = 49–53), 35 ± 1.0 mm PL (range = 34–36), and 13 g ($n = 1$) body mass. A recent hatchling (38.9 mm CL, 26.6 mm PL, 6 g) was caught in the same area on 12 October 1991. Softshells apparently do not overwinter in the nest in this area, although they may in the upper midwest (Gibbons and Nelson 1978).

The nearest population of *A. spinifer aspera* is in Harnett County, North Carolina, 290 km southwest of Norfolk (A. S. Braswell, personal communication, North Carolina Museum of Natural Sciences). Our Lake Whitehurst records establish *A. s. aspera* for the first time in Virginia and indicate a substantial distributional hiatus between south-central North Carolina and southeastern Virginia.

Is the Norfolk population introduced or is it a heretofore undocumented natural population? Intensive sampling with large nets during 1977–91 by the Virginia Department of Game and Inland Fisheries revealed no softshells. However, most sampling occurred in early spring (March to early April) before most freshwater turtles and presumably softshells (see Robinson and Murphy 1978) become active in this area (J. C. Mitchell, unpublished data). This particular sampling effort yielded few turtles of any species (R. Southwick, personal observation). Considerable effort has been expended in North Carolina and Virginia to determine the distributions of reptilian species within these states (W. M. Palmer and A. L. Braswell, personal communications; J. C. Mitchell and C. A. Pague, unpublished data). In addition, the area of southeastern Virginia and northeastern North Carolina has been a favorite collecting area for decades (e.g., Nemuras 1964; W. M. Palmer and R. de Rageot, personal communication). If present earlier, softshells should have been

found. Thus, the likelihood of intentional release of pet trade softshells into Lake Whitehurst cannot be discounted. A presumably introduced specimen of *A. s. spinifera* (George Mason University Collection, GMU 1676) was found in Bull Run Creek, Fairfax County, Virginia in July 1982.

A population of *Apalone spinifera* became established after 1910 in the Maurice River system in southern New Jersey (Conant 1961) and apparently continues to persist (Conant and Collins 1991). Populations in the Colorado River and several aquatic systems in California are also considered introduced (Linsdale and Gressitt 1937, Webb 1962, Stebbins 1985). These introductions indicate that the spiny softshell can survive in areas outside of its natural range and establish viable populations. Thus, until additional populations of *A. s. aspera* are discovered in southeastern Virginia and northeastern North Carolina, the Lake Whitehurst population should be considered an introduced population.

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